



Truck Stop Electrification In New York State

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Climate Change Partners Conference
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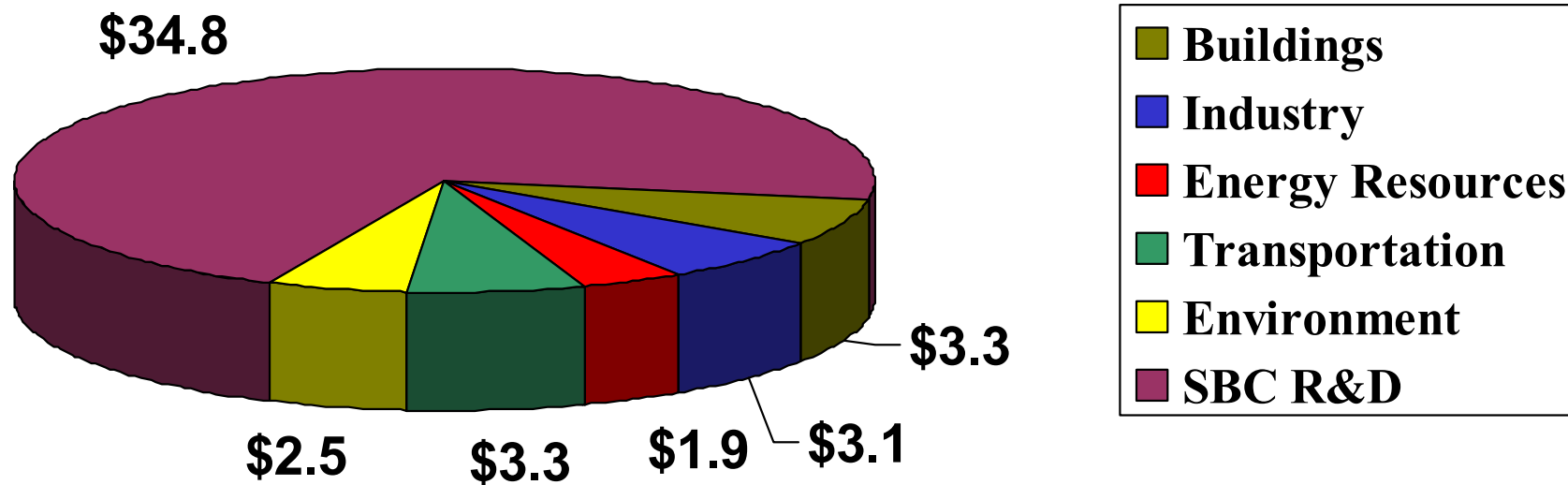
NYSERDA

- public benefit corporation created in 1975 in response to the energy crisis
- independent administrator of the EPA/DOE Energy Star program
- three primary NYS focus areas
energy - environment - economy



2002 R&D Funding

\$48.9 million





Transportation Research



Hybrid-Electric Transit Buses
NYC MTA has orders for 325



Hybrid-Electric Taxis
potential for 12,000 in NYC



Transportation Research



Electric Carrier Route Vehicle
USPS had 6,000 on 1st order



100 Electric Station Cars
At 7 NYC area train stations

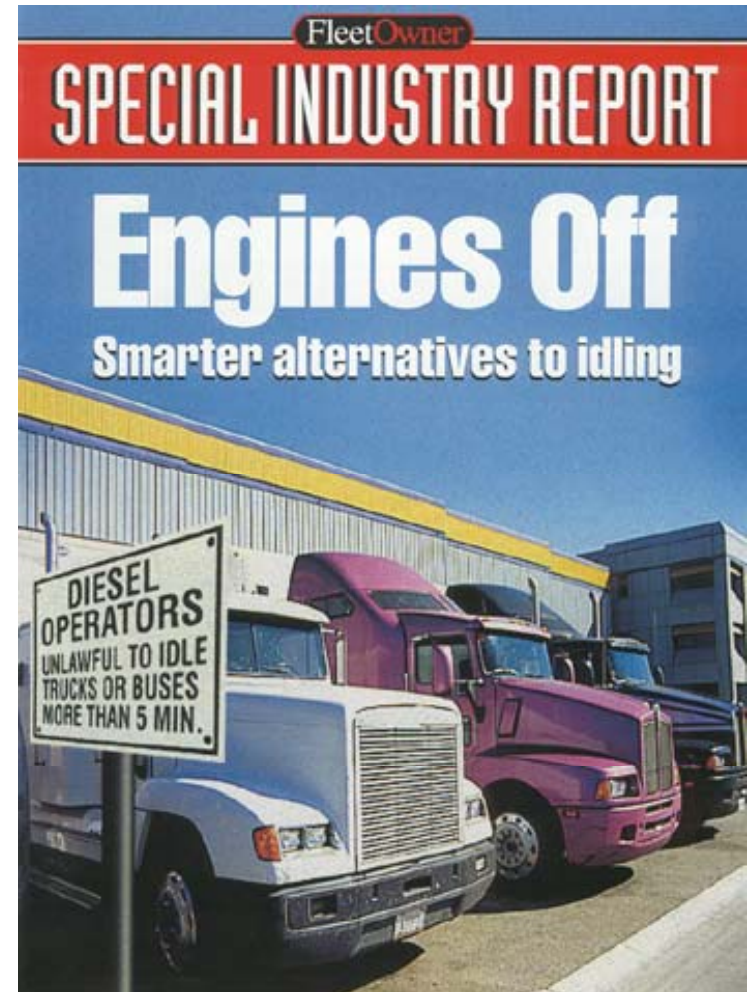


Truck Stop Electrification

What's it all about ?

- 500,000 long-haul trucks
- typical trip > 500 miles
- avg. 8 hrs rest per day
- avg. 300 days per year
- growing % of “residents”

U.S. EPA – Fleet Survey





Truck Stop Electrification

Why do drivers idle ?

- comfort heat and a/c
- electric amenities
- engine warmth
- safety
- habit

U.S. EPA – Driver Survey





Energy Impacts

“long-haul trucks
idling overnight
consume 838 million
gallons of fuel
annually”

Argonne National Lab





Environmental Impacts

“a single truck
idling 1,830 hours
annually, produces
390 lbs of CO,
1024 lbs of NO_x and
22 tons of CO₂”

Argonne National Lab





Economic Impacts

“overnight idling of
1830 hours consumes
\$2400 of fuel and
\$250 of additional
maintenance annually”

Argonne National Lab



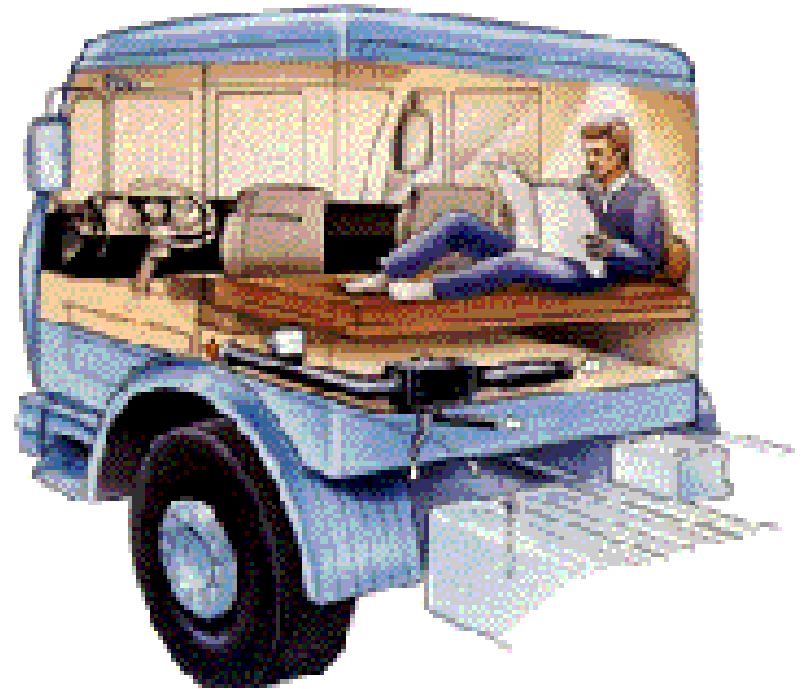


Public Safety Impacts

NYS Large Truck Crashes
annual average 1997-1999

- 133 fatalities
- 7,451 injuries
- 18% fatigue related
- collateral damages

NYSDOT



enhanced rest due to reduced levels of
noise, low frequency vibrations, and
carbon monoxide



Driver Health Impacts

“Overall, the evidence for a potential cancer hazard to humans resulting from chronic inhalation exposure to (diesel emissions) is persuasive.”

U.S. EPA – 09/03/02

“Residents of New York face a one-in-850 chance of developing cancer in their lifetimes simply as a result of breathing diesel soot in the outside air.”

U.S. PIRG – 10/07/02



NYS TSE Feasibility Study

Project Sponsors

Niagara Mohawk Power Corporation

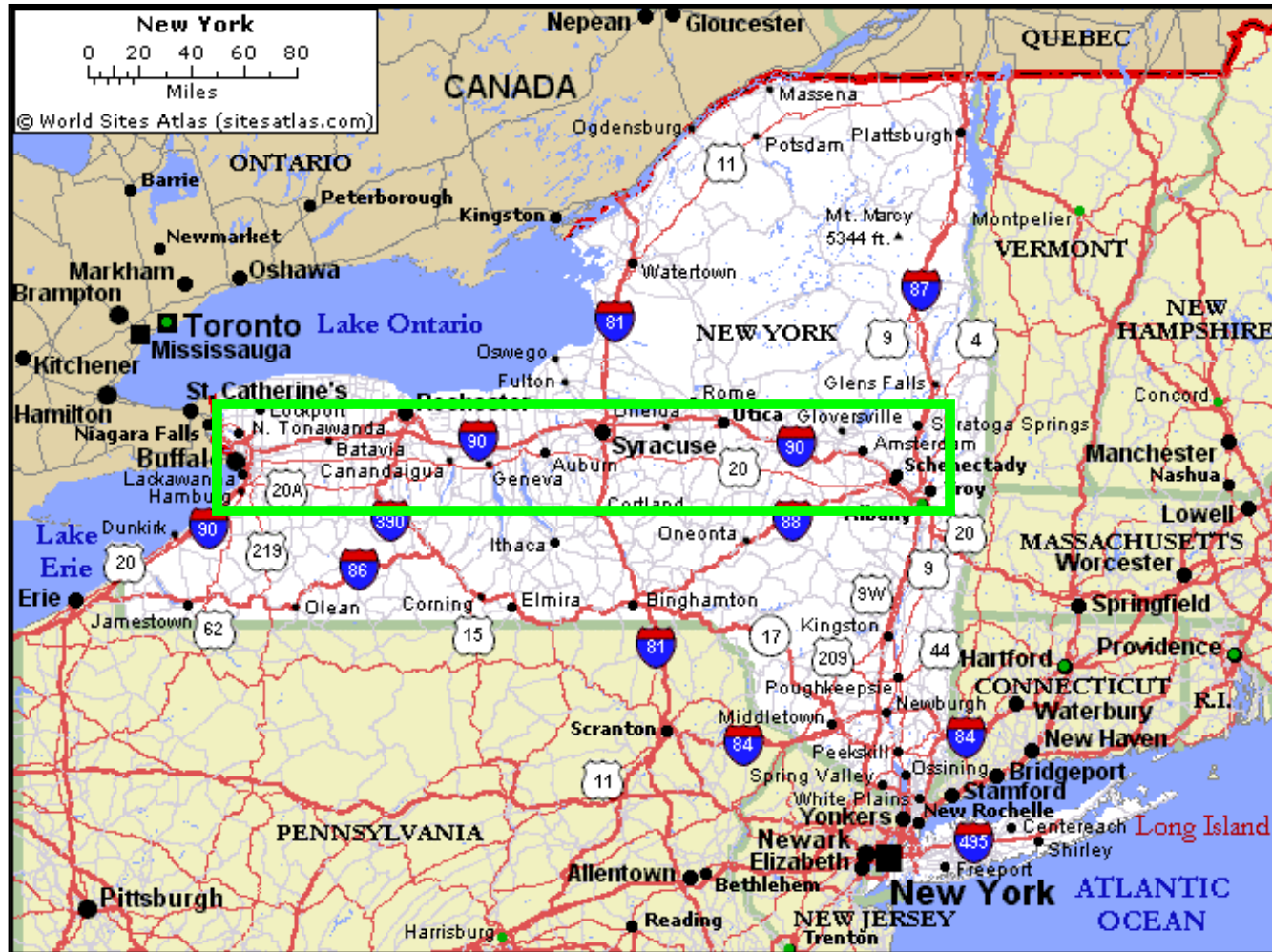
New York State Thruway Authority

New York State Energy R&D Authority

December 2000

feasibility study targeted the 300-mile
long I-90 portion of the NYS Thruway
from Albany to Buffalo

NYS TSE Feasibility Study





NYS TSE Feasibility Study

project work included an extensive market study, preliminary eng design and cost estimate, and the quantification of the resulting energy and environmental benefits

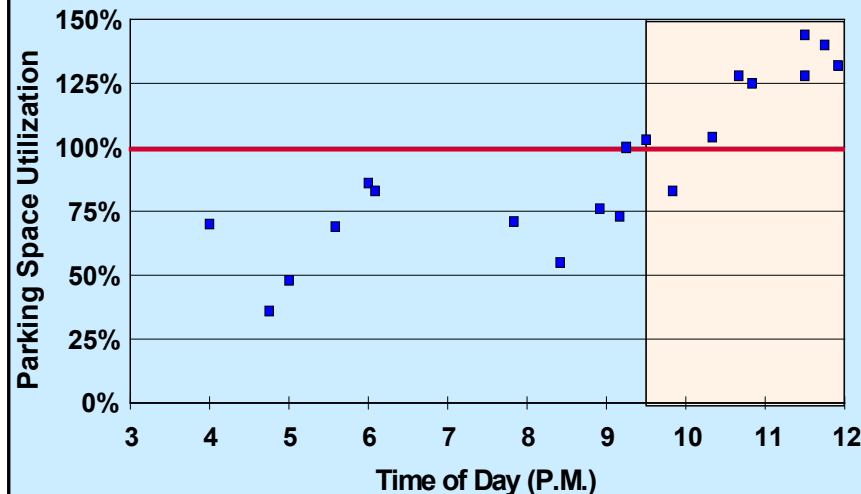




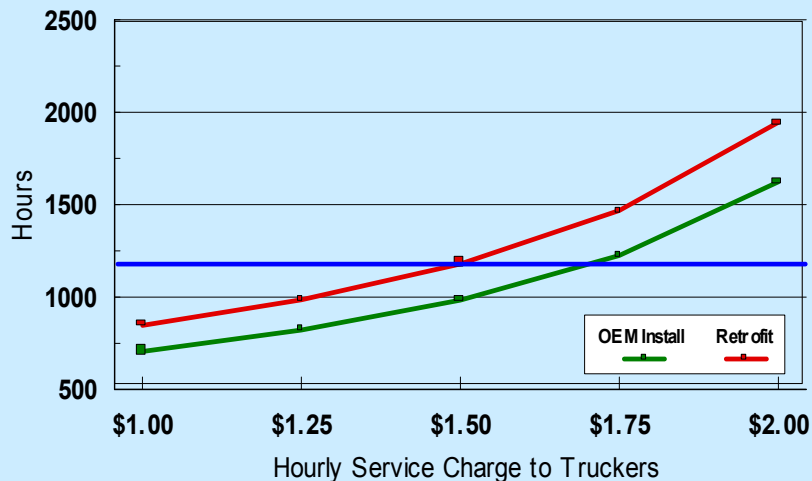
NYS TSE Feasibility Study



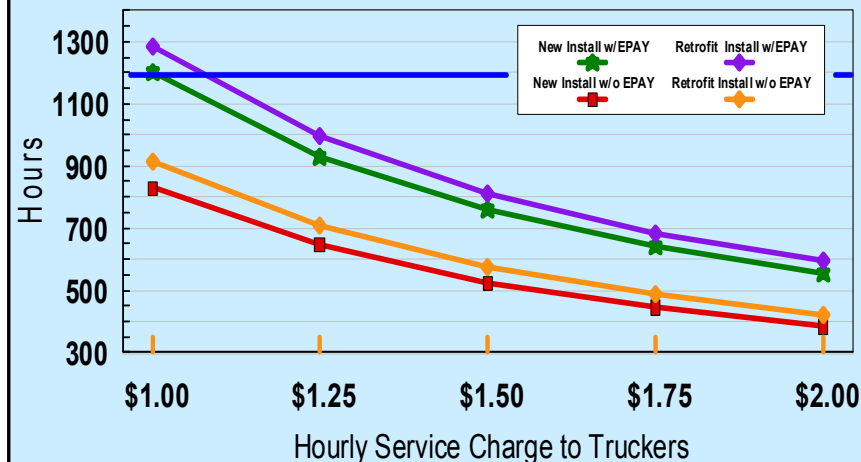
Truck Space Parking Utilization
NYSTA Albany to Buffalo (I-90)
August 7-8, 2000



**One Year Break-Even Analysis for
Inverter Installations by Long-Haul Truckers**



**Three Year Break-Even Analysis for the
TSE Truck Stop Operator**

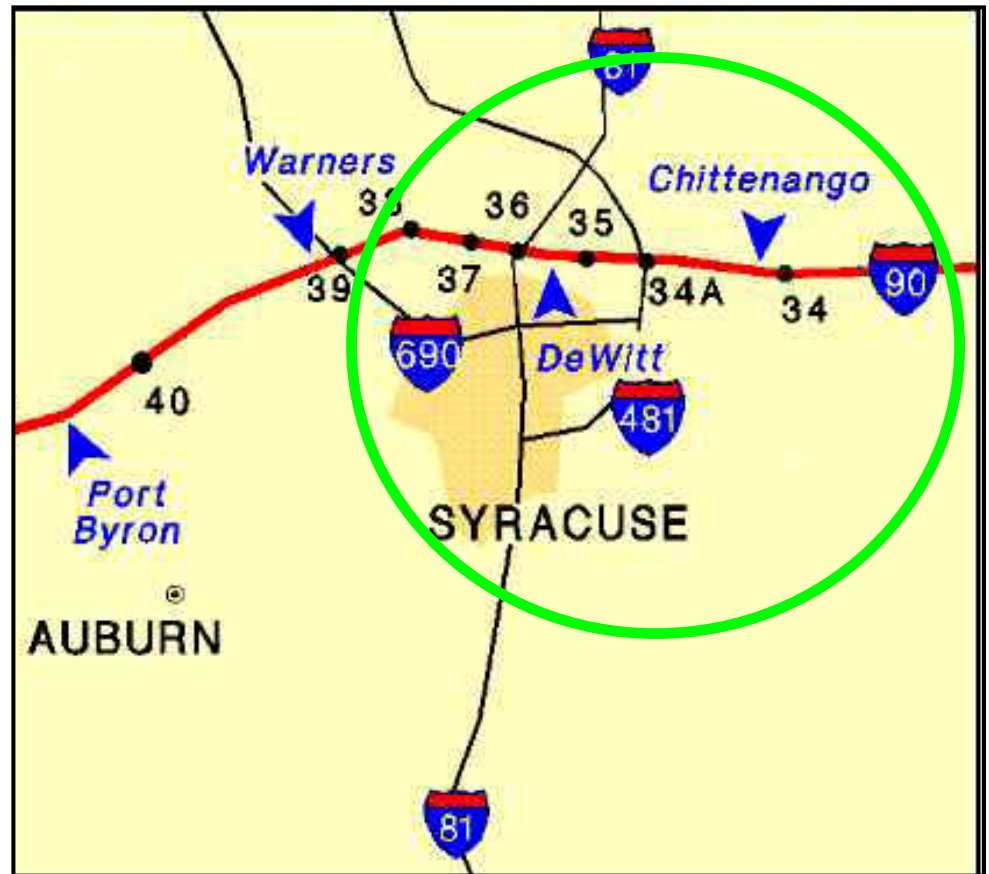




NYS Thruway Demonstration

January 2002

44 electrified parking spaces being installed at two Thruway Travel Plazas in DeWitt and Chittenango





NYS Thruway Demonstration

IdleAire Technologies was chosen as they offered a turnkey installation which could be accessed by any truck without the need for prior modifications.





NYS Thruway Demonstration

overhead HVAC units
are controlled by user
panel at the bottom of
the flexible ductwork





NYS Thruway Demonstration

user panel mounts in cab window and contains all necessary connections and controls, including a card reader for the billing system.





NYS Thruway Demonstration

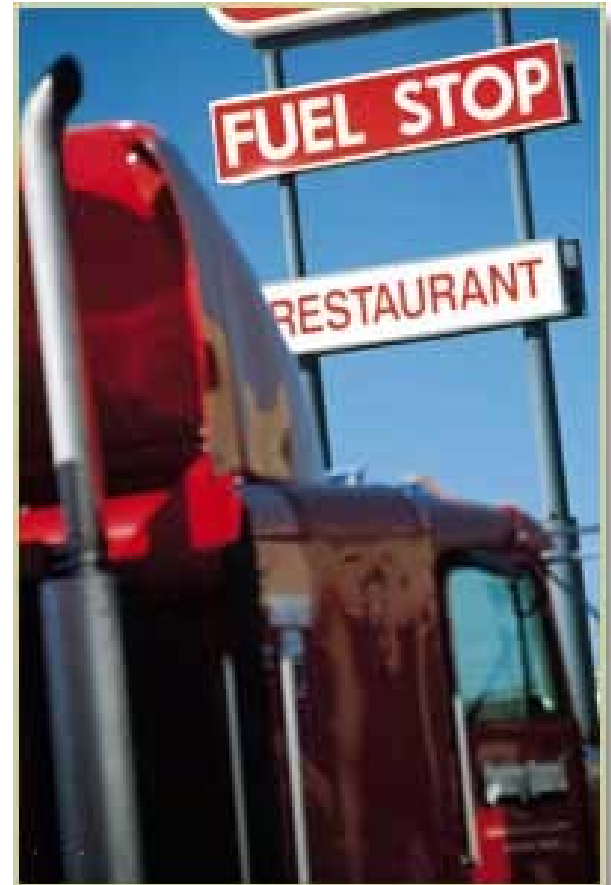
touch screen display
panel provides HVAC
controls, cable TV and
telephone connections,
110-volt electricity,
and can be used to
access the internet





NYS Thruway Demonstration

12 month data collection effort includes system performance, utilization, reliability, customer satisfaction, economics, and ambient air monitoring

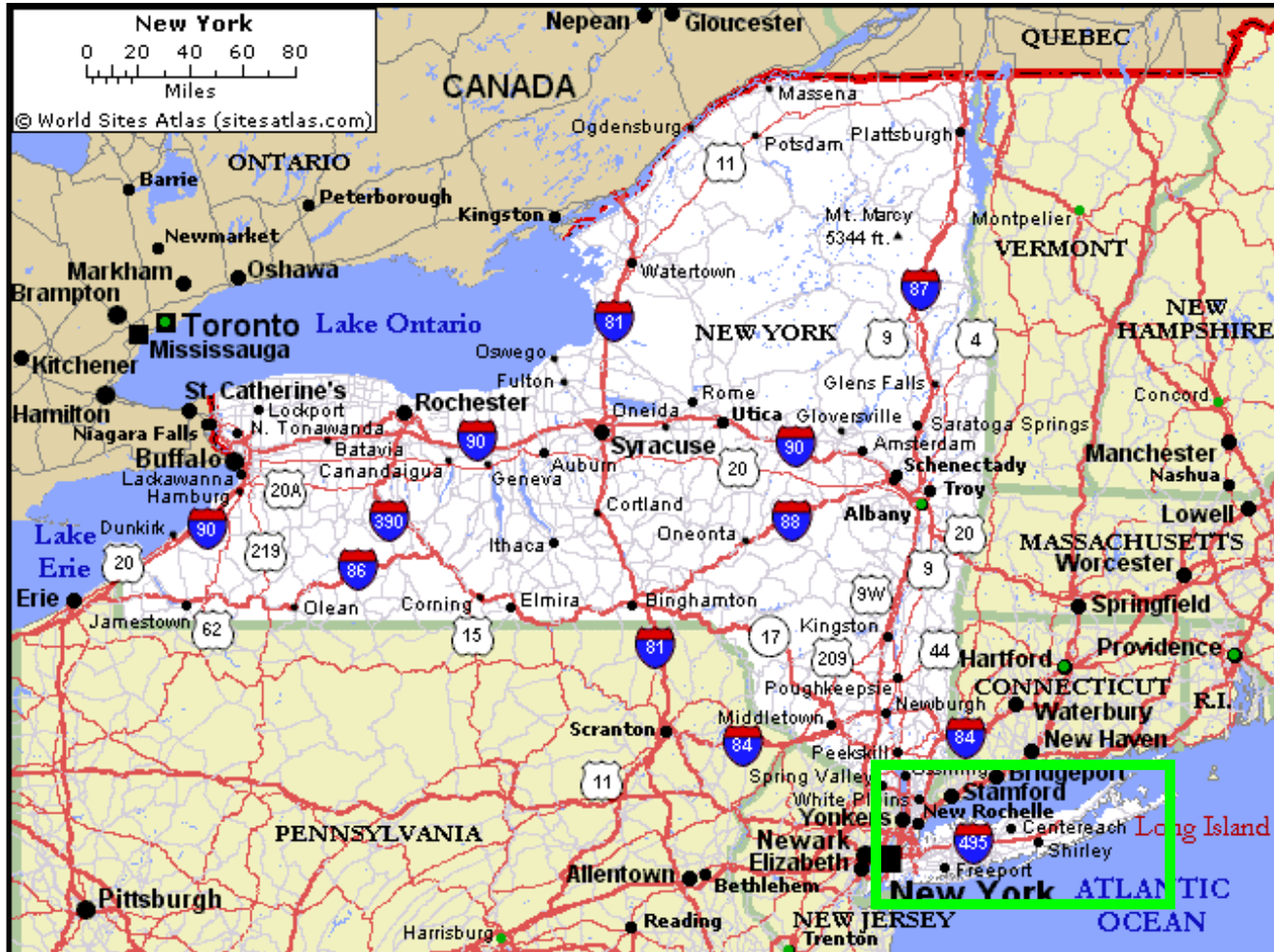








Hunts Point Market Demonstration





Hunts Point Market Demonstration

the largest food
distribution center in
the world. Located
on 60 acres in the
South Bronx

soon to include the
Fulton Fish Market





Hunts Point Market Demonstration

- hundreds of idling diesel vehicles daily
- not uncommon to lay-over 8 to 12 hours
- currently classified as non-attainment for PM10, Carbon Monoxide, and Ozone
- 70% Latino & 30% African American residents
- extremely high (1/3) childhood asthma rates



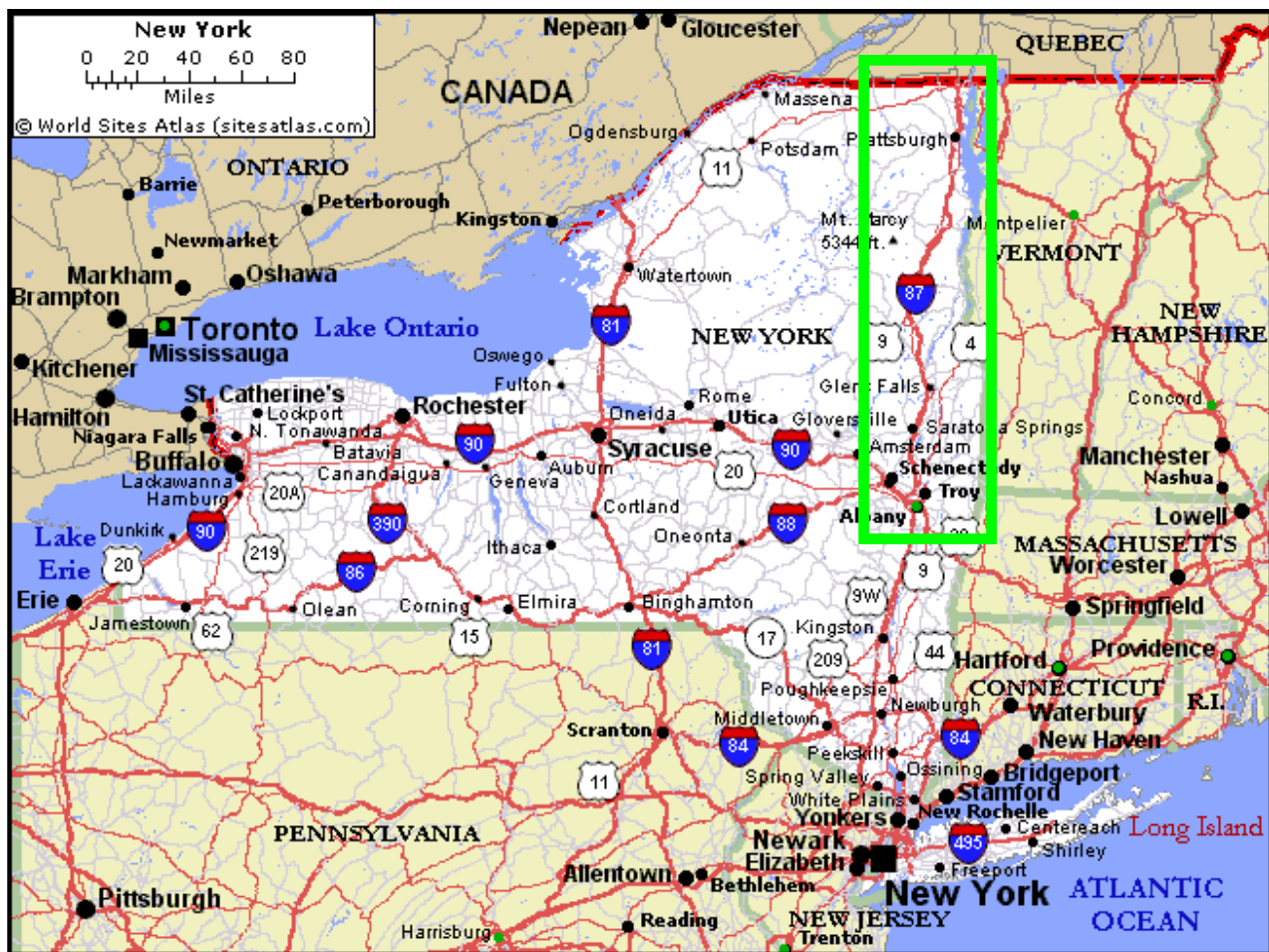
Hunts Point Market Demonstration



32 TSE installations - funded by NYPA, NYCDOT (CMAQ), and the Northeast Clean Air Foundation



Northway Shorepower Demonstration





Stationary Infrastructure

truck modifications not required,
expensive initial installation





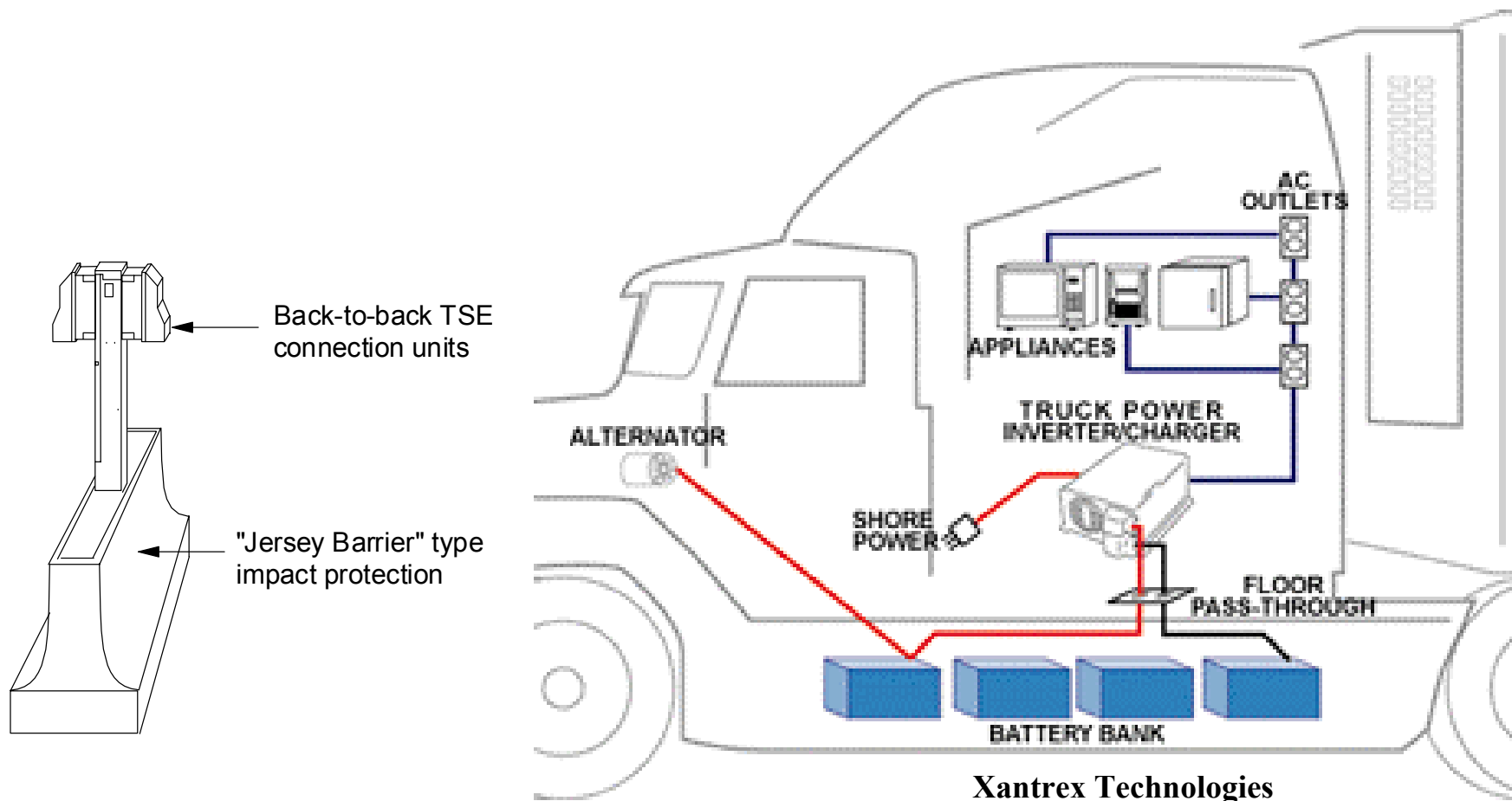
Shorepower

marina concept, requires 110-volt ac,
on-board inverters and electric accessories



Shorepower

significant truck modifications required



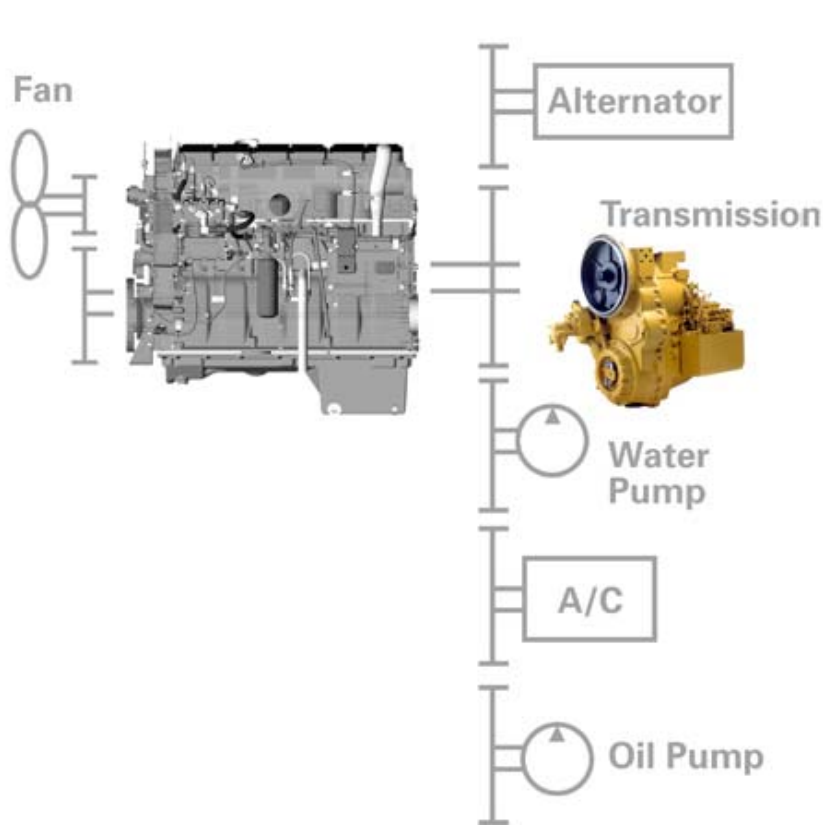


Northway Shorepower Demonstration

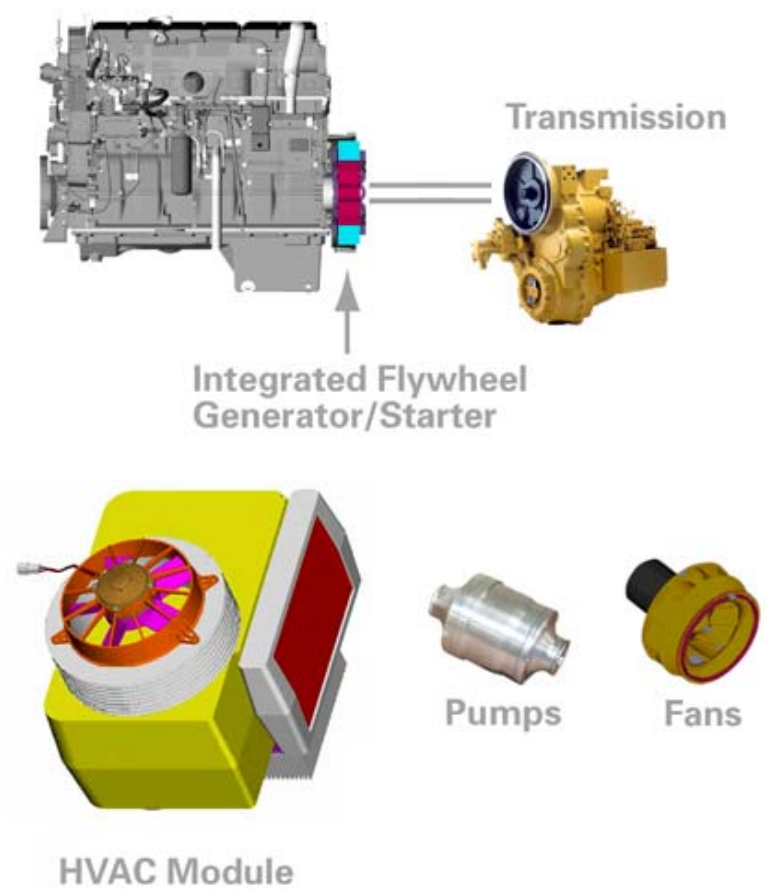
- competition to stationary infrastructure
- project addresses “chicken & egg” scenario
- design addresses “aesthetic concerns”
- identify fleet and modify up to 20 trucks
including electrical HVAC sleeper cab units
- install TSE infrastructure and monitor (1 yr)



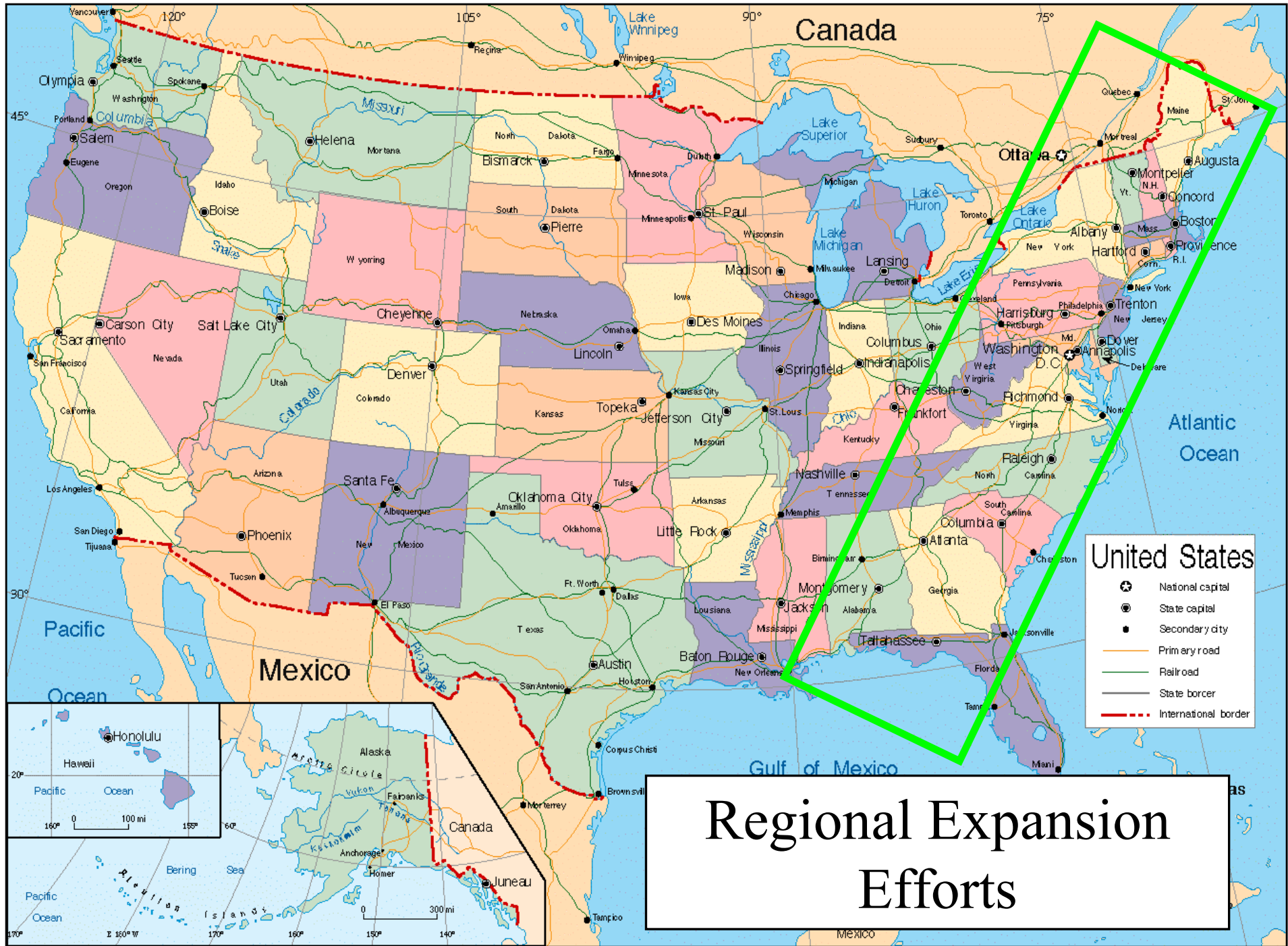
MorElectricTM technology



Engine Accessories are Belt or Gear Driven



Engine Accessories Driven by Electric Motors





I-95 TSE Workshop

- workshop was held June 5, 2002 in Albany, NY
- sponsored by NYSERDA, U.S. EPA, U.S. DOT, NYSTA, and the I-95 Corridor Coalition
- I-95 Coalition includes 13 states from ME to NC

FOR MORE INFO...

www.nyserda.org



I-95 TSE Corridor Study

- funded by U.S. EPA through NESCAUM
- study to include 16 states from ME to FL
- study to consider traffic volumes, truck stops, air quality, population densities, utilities, etc.

FOR MORE INFO...

www.nyserda.org



I-95 CVO / ITS Integration

value added services

- electronic credentialing
- automated permitting
- traveler information
- weather notification
- border crossings





Others Are Taking Notice !

- west coast I-5 TSE workshop being organized
- participants to include Oregon, California, Washington, and British Columbia
- proposal submitted by Iowa for an initial study
- nine potential I-35 states including:
IA, TX, OK, KS, MO, MN, IL, IN, and MI

FOR MORE INFO...

www.nyserda.org



not NIMBY ... but PIMBY !

Sloatsburg lobbies for hookups to let trucks stop engines

By GREG CLARY THE JOURNAL NEWS October 7, 2002

SLOATSBURG — Village residents and officials tomorrow night will push for electrical hookups for tractor-trailers at the New York State Thruway service area to cut down on diesel fumes.

The 7 p.m. meeting with the Thruway Authority in Sloatsburg Village Hall is open to the public. It will focus on a pilot program the authority has near Syracuse to get truckers to turn off their engines while they rest.

"It's certainly something that would help the environment — the air, the noise, safety," said Sloatsburg Mayor Carl Wright.

FOR MORE INFO...

www.nyserda.org